

IN THE CLAIMS:

Please cancel all of the claims, i.e., claims 1-24, without prejudice and substitute therefore the following new claims 25-47:

25. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said film having a modulus of elasticity of 10 MPa or less at a temperature of 250°C.

26. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said film having a water absorption of 1.5% by volume or less.

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27. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

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said film having a residual volatile component in an amount not more than a 3.0% by weight.

28. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said film having a saturation moisture absorption of 1.0% by volume or less.

29. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

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said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

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said film having a peel strength of 0.5 Kgf/5 x 5 mm chip or above at a stage where the semiconductor chip has been bonded to the support member.

30. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said film having, at a stage where the semiconductor chip has been bonded to the support member, a void volume of 10% or less in terms of voids present in the die-bonding material and at an interface between the die-bonding material and the support member.

31. A semiconductor device comprising a support member, a semiconductor chip, and an attaching member for attaching the semiconductor chip to the support member, wherein:

said attaching member is a cured product of a die-bonding material;

said die-bonding material is a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said film i) having a planar dimension not larger than a planar dimension of the semiconductor chip, and ii) not protruding outward from a region of the semiconductor chip at a stage where the semiconductor chip has been bonded to the support member.

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32. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member, with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a filmy die-bonding material comprising polyimide and epoxy resin comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said filmy die-bonding material having a water absorption of 1.5% by volume or less.

33. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a filmy die-bonding material comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said filmy die-bonding material having a residual volatile component in an amount not more than 3.0% by weight.

34. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

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said die-bonding material comprising a filmy die-bonding material comprising polyimide and epoxy resin comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said filmy die-bonding material having a modulus of elasticity of 10 Mpa or less at a temperature of 250°C.

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35. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a filmy die-bonding material comprising polyimide and epoxy resin comprising one or more resins selected from the group consisting of silicone resin, acrylic resin and polyimide resin; resin, polyimide resin and epoxy resin; and

said filmy die-bonding material having, at a stage where the semiconductor chip has been bonded to the support member, a void volume of 10% or less in terms of voids present in the die-bonding material and at an interface between the die-bonding material and the support member.

36. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a die-bonding material comprising filmy die-bonding material comprising polyimide and epoxy resin comprising one or more resins

selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said filmy die-bonding material having a peel strength of 0.5 kgf/5 x 5 mm chip or above at a stage where the semiconductor chip has been bonded to the support member.

37. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a filmy die-bonding material comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and

said filmy die-bonding material i) having a planar dimension not larger than a planar dimension of the semiconductor chip, and ii) not protruding outward from a region of the semiconductor chip at a stage where the semiconductor chip has been bonded to the support member.

38. A process for fabricating a semiconductor device, comprising the steps of attaching a semiconductor chip to a support member with a die-bonding material, and encapsulating the semiconductor chip with a resin;

said die-bonding material comprising a filmy die-bonding material comprising one or more resins selected from the group consisting of silicone resin, acrylic resin and polyimide resin; resin, polyimide resin and epoxy resin;

the process further comprising the steps of:

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mounting said semiconductor chip on said filmy die-bonding material; and
attaching said semiconductor chip to said filmy die-bonding material under
conditions of a temperature of 150°C to 250°C, bonding time of 0.1 (inclusive) second to 2
seconds, and a pressure of 0.1 to 4 gf/mm².

39. A process for fabricating a semiconductor device, according to any one of
claims 32 to 37, further comprising the steps of

mounting said semiconductor chip on said filmy die-bonding material; and
attaching said semiconductor chip to said filmy die-bonding material under
conditions of a temperature of 150°C to 250°C, bonding time of 0.1 (inclusive) second to 2
seconds, and a pressure of 0.1 to 4 gf/mm².

40. A die-bonding material for use in a process for fabricating a semiconductor
device, comprising the step of attaching a semiconductor chip to a support member with
said die-bonding material;

said die-bonding material being a film comprising one or more resins selected from
the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and
said film having a water absorption of 1.5% by volume or less.

41. A die-bonding material for use in a process for fabricating a semiconductor
device, comprising the step of attaching a semiconductor chip to a support member with
said die-bonding material;

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said die-bonding material being a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and
said film having a residual volatile component in an amount not more than 3.0% by weight.

42. The die-bonding material as described in claim 41, wherein said film has a saturation moisture absorption of 1.0% by volume or less.

43. A die-bonding material for use in a process for fabricating a semiconductor device, comprising the step of attaching a semiconductor chip to a support member with said die-bonding material;

said die-bonding material being a film comprising one or more resins selected from the group consisting of silicone resin, acrylic resin, polyimide resin and epoxy resin; and
said film having a modulus of elasticity of 10 Mpa or less at a temperature of 250°C.

44. The semiconductor device according to claim 25, 26, 27, 28, 29, 30 or 31, wherein the polyimide is a thermoplastic.

45. The semiconductor device according to claim 44, wherein the polyimide is a polyimide synthesized from a combination which is selected from the group consisting of a combination of 1,2-(ethylene)bis(trimellitate anhydride) and bis(4-amino-3,5-dimethylphenyl)methane; a combination of 1,2-(ethylene)bis(trimellitate anhydride) and